

Reissue Application
081553.0102

Please replace the paragraph beginning at column 6, line 35 with the following amended paragraph:

The geographical data required for the image are called up and transmitted via the collecting network 6 from the spatially distributed memories 4. The spatially distributed memories are preferably located in the vicinity of the areas on the earth whose data they contain. In this way the data are detected, stored and serviced at the point where a knowledge of the properties to be represented by the data, [[such for example as]] such as, for example, topography, political or social information, etc. is most precise. Further data sources are located at the points where further data are detected or assembled, [[such for example as]] such as, for example, meteorological research stations which collect and process information received from satellites.

Please replace the paragraph beginning at column 6, line 60 with the following amended paragraph:

In the supply network 8, substantially all of the image data required for representation are transmitted to the display device 5. Consequently a high data transmission rate of up to 2 MBit/s is required in the direction of the display unit, which is enabled by intrinsic asynchronous connections or by bundling ISDN connections.

Please replace the paragraph beginning at column 7, line 12 with the following amended paragraph:

In this embodiment given by way of example, a two-dimensional polygon grid model is used to display the data, which serves as a two-dimensional co-ordinate system for positioning the data. [[There were used as data]] Data to be displayed includes, for example satellite images, i.e. information relating to the [[colouring]] coloring of the earth surface or geopolitical data or actual or stored meteorological data. Images of the same point on the earth surface [[were]] may be shown at different points in time, so that a type of "time journey" [[could]] may be produced.

Please replace the paragraph beginning at column 7, line 21 with the following amended paragraph:

Data in tabular form, [[such for example as]] such as, for example, temperature information, were masked in as display tables into the view. For certain areas, CAD-models of

Reissue Application
081553.0102

buildings were available, which were inserted into the view. Then the location of the observer could be displaced at will in these [[CAD-modelled]] CAD-modeled buildings.

Please replace the paragraph beginning at column 7, line 35 with the following amended paragraph:

After selection of the earth as an object and input of a location and a direction of view in the [[final]] display device 5, the node 3 determines the field of view of the observer and calls up the data via the interchange network 7 and the nodes 1 and 2. These nodes in turn call up, via the collecting network 6, from the spatially distributed data sources 4 or for example from the camera 9, the required data and transmit them over the interchange network 7 to the node 3 for central storage. The node 3 determines the representation of the data centrally stored therein and sends this transmission for viewing over the supply network 8 to the display device 5.

Please replace the paragraph beginning at column 8, line 7 with the following amended paragraph:

By virtue of the fact that the data are centrally stored in sections only in the accuracy required for image resolution, the [[number]] amount of centrally stored data depends substantially [[only]] on the desired image resolution.

Please replace the paragraph beginning at column 8, line 38 with the following amended paragraph:

An advantage in this type of address formation is [[further]] that each further section of the object to be represented has a fixed address which to a great extent simplifies the search for the associated data.

Please replace the paragraph beginning at column 9, line 30 with the following amended paragraph:

FIG. 9 shows the same cloud distribution. Now the earth has been shown as a globe, as it would appear to an observer [[is]] in space. FIG. 10 shows a view of the same cloud distribution in connection with a representation of the land masses of the earth as they would appear to an observer in space. In order to show the view of the earth surface, the topographical grid network was provided with [[colour]] color information from the pixel graphics of satellite images of the earth surface. As at the time of image generation actual cloud information was

Reissue Application
081553.0102

used for image generation, there was a view close to reality of the earth from space at the time of image generation.

Please replace the paragraph beginning at column 9, line 42 with the following amended paragraph:

FIG. 11 shows a view generated in this way of the American [[Caribbean]] Gulf coast, as it would have appeared to an observer looking north in an orbit close to the earth above the [[Caribbean]] Gulf of Mexico. In addition, the actual temperature data of selected points present in tabular form were entered in display tables into the image. These temperature data were called up and transmitted through the interchange network from various meteorological research stations at various points.

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Amended) A method of providing a pictorial representation of space-related data of a selectable object, the representation corresponding to [the] *a* view of the object by an observer with a selectable location and a selectable direction of view comprising:

(a) providing a plurality of spatially distributed data sources for storing space-related data;

(b) determining a field of view including [the] *an* area of the object to be represented through [the] *a* selection of [the] *a* distance of the observer to the object and [the] *an* angle of view of the observer to the object;

(c) requesting data for the field of view from at least one of the plurality of spatially distributed data sources;

(d) centrally storing the data for the field of view;

(e) representing the data for the field of view in a pictorial representation having one or more sections;

(f) *using a computer*, dividing each of the one or more sections having image resolutions below a desired image resolution into a plurality of smaller sections, requesting higher resolution [[space related]] space-related data for each of the smaller sections from at least one of the plurality of spatially distributed data sources, centrally storing the higher resolution [[space related]] space-related data, and representing the data for the field of view in [a] *the* pictorial representation; and

(g) repeating step (f), dividing the sections into smaller sections, until every section has the desired image resolution or no higher image resolution data is available.

2. The method of pictorial representation defined in claim 1, further including altering the selectable location and performing steps (b) through (g).

3. The method of pictorial representation defined in claim 2, further including determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system.

4. The method of pictorial representation defined in claim 1, further including altering the selectable direction of the view and performing steps (b) through (g).

Reissue Application
081553.0102

5. The method of pictorial representation defined in claim 4, further including determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system.

6. The method of pictorial representation defined in claim 1, wherein step (f) further includes requesting data of a uniform resolution for each of the smaller sections.

7. The method of pictorial representation defined in claim 1, wherein steps (c) and (f) further include requesting data not already centrally stored from only one of the spatially distributed data sources.

8. The method of pictorial representation defined in claim 1, wherein step (f) further includes showing only the centrally stored data of each section with the highest spatial density.

9. The method of pictorial representation defined in claim 1, wherein step (f) further includes effecting the representation of the data in an optional pre-set form of representation.

10. The method of pictorial representation defined in claim 1, further including removing the data of a section from the central store when the section passes out of the field of view due to an alteration in the location or of the angle of the view.

11. The method of pictorial representation defined in claim 1, further including permanently centrally storing at least one full set of space-related data with a low spatial resolution.

12. (Amended) The method of pictorial representation defined in claim 1, further including not showing [[the]] regions of the object located with respect to the observer behind non-transparent areas of the object.

13. The method of pictorial representation defined in claim 1, wherein step (f) comprises dividing each of the one or more sections using a model of the binary tree.

14. The method of pictorial representation defined in claim 1, wherein step (f) comprises dividing each of the one or more sections using a model of the quadrant tree.

15. The method of pictorial representation defined in claim 1, wherein step (f) comprises dividing the sections using a model of the octant tree.

Reissue Application
081553.0102

16. The method of pictorial representation defined in claim 1, further including using an adaptive sub-division model with a plurality of models used next to one another for sub-dividing the field of view into smaller sections.

17. The method of pictorial representation defined in claim 1, wherein the data are present as pixel graphics and/or as vector graphics and/or in tabular form.

18. The method of pictorial representation defined in claim 1, wherein the object is a heavenly body.

19. (Amended) The method of pictorial representation defined in claim 18, wherein steps (e) and (f) further include [[representating]] representing the data with a two-dimensional polygonal geometrical model of the topography of the object, the spatial relationship of the data being given by the provision of two co-ordinates on the polygonal geometrical model.

20. The method of pictorial representation defined in claim 19, wherein height information is represented as color vertices on the two-dimensional polygonal geometrical model.

21. The method of pictorial representation defined in claim 19, wherein an adaptive topographical grid model is used, the spatial distance between two grid lines becoming smaller as the topographical altitude becomes greater.

22. The method of pictorial representation defined in claim 19, wherein step (f) further includes dividing each of the one or more sections using a model of the quadrant tree.

23. The method of pictorial representation defined in claim 22, wherein step (f) further includes dividing each of the one or more sections using an adaptive sub-division model such that the sub-division merges into a binary tree at the poles.

24. The method of pictorial representation defined in claim 19, wherein in the two-dimensional polygonal grid model, spatial data are shown on a plurality of different two-dimensional layers.

25. The method of pictorial representation defined in claim 18, wherein the representation in steps (e) and (f) is in the form of a globe.

26. The method of pictorial representation defined in claim 18, wherein the representation in steps (e) and (f) is in the form of cartographic form of representation.

Reissue Application
081553.0102

27. The method of pictorial representation defined in claim 1, wherein the object is the earth.

28. The method of pictorial representation defined in claim 1, wherein steps (e) and (f) further include representing the data with a polygonal grid model.

29. The method of pictorial representation defined in claim 28, wherein step (f) comprises dividing the sections using a model of the octant tree.

30. The method of pictorial representation defined in claim 1, wherein steps (e) and (f) further include representing the data with a three-dimensional geometrical model of the topography of the objects, the spatial relationship of the data being given by the provision of three co-ordinates on the geometrical model.

31. The method of pictorial representation defined in claim 1, wherein the space-related data include CAD models.

32. The method of pictorial representation defined in claim 1, further including inserting animated objects into the pictorial representation.

33. The method of pictorial representation defined in claim 1, further including inserting display tables into the pictorial representation.

34. The method of pictorial representation defined in claim 1, further including inserting information and/or directly generated image material into the representation.

35. (Amended) The method of pictorial representation defined in claim [[1]] 34, wherein the directly generated image material includes camera shots.

36. (Amended) The method of pictorial representation defined in claim 1, wherein the [[space related]] space-related data are provided with references to further spatial data.

37. (Amended) The method of pictorial representation defined in claim 1, wherein the [[space related]] space-related data are provided with references to thematically adjacent data.

38. (Amended) The method of pictorial representation defined in claim 1, wherein the [[space related]] space-related data are provided with references to data of the same area with another resolution.

39. (Amended) The method of pictorial representation defined in claim 1 further including determining a probability for [[the]] regions surrounding the field of view that

Reissue Application
081553.0102

the regions will pass into the field of view when there is an alteration in the location or of the angle of view of the observer.

40. The method of pictorial representation defined in claim 39 further including requesting and centrally storing the data of the areas with the highest probability.

41. The method of pictorial representation defined in claim 1, wherein steps (c) and (f) further include transmitting data asynchronously.

42. The method of pictorial representation defined in claim 1, wherein steps (e) and (f) further include showing the data on a screen.

43. (New) The method of pictorial representation defined in claim 1, wherein a plurality of computers can access the plurality of spatially distributed data sources.

44. (New) The method of pictorial representation defined in claim 1, wherein step (b) includes determining the field of view using an automatic position-fixing system.

45. (New) The method of pictorial representation defined in claim 2, further including altering the selectable direction of the view, performing steps (b) through (g), and determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system.

46. (New) The method of pictorial representation defined in claim 1, wherein step (c) includes requesting data for the field of view from at least two of the plurality of spatially distributed data sources.

47. (New) The method of pictorial representation defined in claim 1, wherein step (c) includes requesting data for the field of view from at least three of the plurality of spatially distributed data sources.

48. (New) The method of pictorial representation defined in claim 1, wherein step (c) includes requesting data for the field of view from at least four of the plurality of spatially distributed data sources.

49. (New) The method of pictorial representation defined in claim 1, wherein the data are present as pixel graphics.

50. (New) The method of pictorial representation defined in claim 1, wherein the data are present as vector graphics.

51. (New) The method of pictorial representation defined in claim 1, wherein the data are present in tabular form.

52. (New) The method of pictorial representation defined in claim 1, further including inserting information into the representation.

53. (New) The method of pictorial representation defined in claim 1, further including inserting directly generated image material into the representation.

54. (New) The method of pictorial representation defined in claim 1, further including inserting directly generated image material into the representation, wherein the directly generated image material includes images captured by a running camera.

55. (New) The method of pictorial representation defined in claim 2, wherein a pictorial representation is provided to the observer when the selectable location of the view is altered and steps (b) through (g) are performed.

56. (New) The method of pictorial representation defined in claim 4, wherein a pictorial representation is provided to the observer when the selectable direction of the view is altered and steps (b) through (g) are performed.

57. (New) The method of pictorial representation defined in claim 1, wherein at least one of the spatially distributed data sources is located where the space-related data is collected or processed.

58. (New) The method of pictorial representation defined in claim 43, further including altering the selectable direction of the view, performing steps (b) through (g), and determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system.

59. (New) The method of pictorial representation defined in claim 43, further including altering the selectable location of the view, performing steps (b) through (g), and determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system.

60. (New) The method of pictorial representation defined in claim 43, wherein step (c) includes requesting data for the field of view from at least two of the plurality of spatially distributed data sources.

61. (New) The method of pictorial representation defined in claim 43, wherein step (c) includes requesting data for the field of view from at least three of the plurality of spatially distributed data sources.

62. (New) The method of pictorial representation defined in claim 43, wherein step (c) includes requesting data for the field of view from at least four of the plurality of spatially distributed data sources.

Reissue Application
081553.0102

63. (New) The method of pictorial representation defined in claim 43, further including inserting directly generated image material into the representation, wherein the directly generated image material includes images captured by a running camera.

64. (New) The method of pictorial representation defined in claim 43, wherein the space-related data are provided with references to thematically adjacent data.

65. (New) The method of pictorial representation defined in claim 64, wherein the references are hyperlinks.

66. (New) The method of pictorial representation defined in claim 43, wherein the space-related data are provided with references to further spatial data.

67. (New) The method of pictorial representation defined in claim 66, wherein the references are hyperlinks.

68. (New) The method of pictorial representation defined in claim 58, wherein a pictorial representation is provided to the observer when the selectable direction of the view is altered and steps (b) through (g) are performed.

69. (New) The method of pictorial representation defined in claim 59, wherein a pictorial representation is provided to the observer when the selectable location of the view is altered and steps (b) through (g) are performed.

70. (New) The method of pictorial representation defined in claim 43, wherein at least one of the spatially distributed data sources is located where the space-related data is collected or processed.

71. (New) The method of pictorial representation defined in claim 43, wherein steps (e) and (f) further include representing the data with a two-dimensional polygonal geometrical model of the topography of the object, the spatial relationship of the data being given by the provision of two co-ordinates on the polygonal geometrical model, and further wherein in the two-dimensional polygonal grid model, space-related data are shown on a plurality of different two-dimensional layers.

72. (New) The method of pictorial representation defined in claim 44, further including altering the selectable direction of the view, performing steps (b) through (g), and determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system.

Reissue Application
081553.0102

73. (New) The method of pictorial representation defined in claim 44, further including altering the selectable location of the view, performing steps (b) through (g), and determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system.

74. (New) The method of pictorial representation defined in claim 44, wherein step (c) includes requesting data for the field of view from at least two of the plurality of spatially distributed data sources.

75. (New) The method of pictorial representation defined in claim 44, wherein step (c) includes requesting data for the field of view from at least three of the plurality of spatially distributed data sources.

76. (New) The method of pictorial representation defined in claim 44, wherein step (c) includes requesting data for the field of view from at least four of the plurality of spatially distributed data sources.

77. (New) The method of pictorial representation defined in claim 44, further including inserting directly generated image material into the representation, wherein the directly generated image material includes images captured by a running camera.

78. (New) The method of pictorial representation defined in claim 44, wherein the space-related data are provided with references to thematically adjacent data.

79. (New) The method of pictorial representation defined in claim 78, wherein the references are hyperlinks.

80. (New) The method of pictorial representation defined in claim 44, wherein the space-related data are provided with references to further spatial data.

81. (New) The method of pictorial representation defined in claim 80, wherein the references are hyperlinks.

82. (New) The method of pictorial representation defined in claim 72, wherein a pictorial representation is provided to the observer when the selectable direction of the view is altered and steps (b) through (g) are performed.

83. (New) The method of pictorial representation defined in claim 73, wherein a pictorial representation is provided to the observer when the selectable location of the view is altered and steps (b) through (g) are performed.

Reissue Application
081553.0102

84. (New) The method of pictorial representation defined in claim 44, wherein at least one of the spatially distributed data sources is located where the space-related data is collected or processed.

85. (New) The method of pictorial representation defined in claim 44, wherein steps (e) and (f) further include representing the data with a two-dimensional polygonal geometrical model of the topography of the object, the spatial relationship of the data being given by the provision of two co-ordinates on the polygonal geometrical model, and further wherein in the two-dimensional polygonal grid model, space-related data are shown on a plurality of different two-dimensional layers.

STATEMENT OF STATUS AND SUPPORT FOR ALL CHANGES UNDER 37
C.F.R. 1.173(e)

I. Status of the Claims

Claims 1-85 are currently pending. Claims 1, 12, 19, 35, 36-39 have been amended herein. New claims 43-85 have been added.

II. Support for Amendments to the Specification

The specification has been amended to correct for spelling errors, grammatical errors, and typographical errors. These changes do not contain new matter.

At the paragraphs beginning at column 2, line 66, column 3, line 16, column 3, line 42, and column 8, line 7, the specification was amended to correct “number” of data to be “amount” of data, which was a translation error from the priority German application.

At the paragraph beginning at column 5, line 39, the descriptions of the Figures were amended to correct for an error in the Figure reference numerals. Specifically, the description of Figure 3 was replaced with the description originally present for Figure 7; the description of Figure 4 was replaced with the description originally present for Figure 3; the description of Figure 5 was replaced with the description originally present for Figure 4; the description of Figure 6 was replaced with the description originally present for Figure 5; and the description of Figure 7 was replaced with the description originally present for Figure 6. Thus, these changes do not contain new matter.

At the paragraph beginning at column 5, line 62, the specification was amended to correct “simultaneously” to be “together,” which was a translation error from the priority German application.

At the paragraph beginning at column 6, line 14, the secondary node was erroneously labeled with a reference to 8, rather than 2. This change does not constitute new matter, because in the beginning of the paragraph, secondary node is properly labeled with reference number 2.

Reissue Application
081553.0102

At the paragraph beginning at column 9, line 42, “Caribbean” was corrected to refer to “Gulf” or “Gulf of Mexico” in relation to Figure 11, because, Figure 11, as originally filed, illustrates the Gulf coast. Thus, this change does not constitute new matter.

Accordingly, no new matter has been added to the specification by the above-described amendments.

III. Support for Amendments to the Claims

Claims 1 and 36-38 were amended to correct for an error in the spelling of “space-related.” Accordingly, this amendment does not add new matter. Claim 19 was also corrected for a spelling error.

Claims 12 and 39 were corrected to delete “the” before “regions” because of an error in antecedent basis.

Claim 35 contains an antecedent basis error. Claim 35 was corrected to be dependent from claim 34 to fix this issue.

Claim 43 was added by this amendment. Support for this amendment can be found at least at column 6, lines 2-4. Specifically, the column 6, lines 2-4 provides that “[t]his device according to the invention makes it possible for a plurality of evaluation units 1, 2, and 3 simultaneously to access the common spatially distributed data sources 4.” Support for this amendment can also be found at column 6, lines 14-19 (“The nodes are in turn sub-divided into primary nodes 1, secondary nodes 2, and tertiary nodes 3. In this case a primary node is connected both to the interchange network 7 and also via the conduits 6 directly to the spatially distributed data sources and by the conduit 8 directly with the display unit 5.”); column 6, lines 24-25 (“Systems of the company Silicon Graphics (SGI Onyx) were used as a node computer.”); Figure 1; and Figure 2.

Claim 44 was added by this amendment. Support for this amendment can be found at least at column 7, lines 9-11 and lines 27-30. Specifically, column 7, lines 9-11 provides that “[a]utomatic position-fixing systems can also be considered as further input media, such as are used in navigation aids for motor vehicles or aircraft,” and column 7, lines 27-30 provides that “[v]ia position-fixing systems, symbols, for example for ships, aircraft, or motor

Reissue Application
081553.0102

vehicles, in their instantaneous geographical positions, can be inserted into this system and/or animated..”

Claim 45 was added by this amendment. Support for this amendment can be found at least at claims 4 and 5, as originally filed, as well as at column 3, lines 25-28 and column 4, line 65- column 5, line 12.

Claims 46, 47, and 48 were added by this amendment. Support for these amendments can be found at least at Figure 1 and at column 2, lines 10-20. Figure 1 illustrates a plurality of spatially distributed data sources connected by a data transmission network, which indicates that the data can be requested from at least two, at least three, or at least four of the plurality of spatially distributed data sources.

Claim 49 was added by this amendment. Support for this amendment can be found at least at claim 17 as originally filed.

Claim 50 was added by this amendment. Support for this amendment can be found at least at claim 17 as originally filed.

Claim 51 was added by this amendment. Support for this amendment can be found at least at claim 17 as originally filed.

Claim 52 was added by this amendment. Support for this amendment can be found at least at claim 34 as originally filed.

Claim 53 was added by this amendment. Support for this amendment can be found at least at claim 34 as originally filed.

Claim 54 was added by this amendment. Support for this amendment can be found at least at claim 34 and 35 as originally filed and at column 5, lines 28-33 (“Thus for example, instead of showing spatially distributed stored satellite images of the earth, direct camera images from a satellite can be shown, or instead of the illustration of a public place, images of the place generated by a running camera can be shown.”).

Reissue Application
081553.0102

Claims 55 and 56 were added by this amendment. Support for these amendments can be found at least at column 3, lines 32-41 (“After each transmission and central storage of data, an image representation results, even if the data are insufficient to make possible the desired image resolution. As a result, even if the method is interrupted due to an alteration in the field of view and newly begun for a new field of view, the data for an image, even at low resolution, are always available. Thus if the observer moves extremely rapidly, the case is avoided in which no [further] image is shown.”).

Claim 57 was added by this amendment. Support for this amendment can be found at least at column 6, lines 43-46 (“Further data sources are located at the points where further data are detected or assembled, such for example as meteorological research stations which collect and process information received from satellites.”).

New claims 58 and 72 correspond to claim 45. As such, support for this amendment is the same as set forth above regarding claim 45.

New claims 59 and 73 correspond to claims 2 and 3 as originally filed. As such, support for this amendments can be found at least at claims 2 and 3 as originally filed as well as at column 3, lines 25-28 and column 4, line 65- column 5, line 12.

New claims 60, 61, 62, 74, 75, and 76 correspond to claims 46, 47, and 48. As such, support for these amendments is the same as set forth above regarding claims 46-48.

New claims 63 and 77 correspond to claim 54. As such, support for this amendment is the same as set forth above regarding claim 54.

Claims 64, 65, 66, 67, 78, 79, 80, and 81 were added by this amendment. Support for these amendments can be found at least at column 4, lines 55-64 (“The spatially distributed raised and/or stored data of the spatially distributed data sources can be provided at the points of their raising and/or storage with references, which indicate the storage points for data of adjacent areas or further data on the same area. If such links (hyperlinks) of the spatially distributed data exist between one another, the central system requires no knowledge of the exact spatial storage points for all data of the object, as it is linked, originating from one of the spatially distributed stores, to the further data.”).

Reissue Application
081553.0102

New claims 68, 69, 82, and 83 correspond to claims 55 and 56. As such, support for these amendments is the same as set forth above with respect to claims 55 and 56.

New claims 70 and 84 correspond to claim 57. As such, support for this amendment is the same as set forth above with respect to claim 57.

New claims 71 and 85 correspond to claims 19 and 24 as originally filed. As such, support for this amendment can be found at least at claims 19 and 24 as originally filed as well as at column 4 lines 34-45 (“In order also to display three-dimensional information in two-dimensional images, the two-dimensional basic layer may be supplemented with other two-dimensional layers, upon which the further information is displayed. Particularly suitable as a model for two-dimensional imaging of the surface of physical bodies is a geometric model in which the surface is sub-divided into polygons. In the topographic grid model the polygon grid imitates the topography of the surface. By means of this display the provision of the two coordinates of a grid point is sufficient to produce a spatial relationship between various data and the surface of the object displayed.”).

Accordingly, no new matter has been added to the claims by the above-described amendments, and the amendments to the claims do not broaden the scope of the claims.

Respectfully submitted,

Date: February 21, 2013

/Paul R. Morico/

Paul R. Morico
Reg. No. 35,960
BAKER BOTTS L.L.P.
One Shell Plaza
910 Louisiana Street
Houston, Texas 77002-4995
Telephone: 713.229.1732
Facsimile: 713.229.7732